

Review of the Genera *Ividia*, *Folinella*, *Oscilla*, *Pseudoscilla*, *Tryptichus* and *Peristichia* (Gastropoda, Pyramidellidae) from Brazil, with Descriptions of Four New Species

ALEXANDRE D. PIMENTA,¹ FRANKLIN N. SANTOS² AND RICARDO S. ABSALÃO^{2,3}

¹ Departamento de Invertebrados, Museu Nacional, Universidade Federal do Rio de Janeiro, Quinta da Boa Vista, Rio de Janeiro, RJ, Brazil, CEP: 20940-040

(e-mail: adpimenta@yahoo.com.br)

² Departamento de Zoologia, Instituto de Biologia, Universidade do Estado do Rio de Janeiro, Avenida São Francisco Xavier 524, Maracanã, Rio de Janeiro, RJ, Brazil, CEP 20550-900

(e-mail: columel@yahoo.com.br)

³ Departamento de Zoologia, Instituto de Biologia, Universidade Federal do Rio de Janeiro

(e-mail: absalao@hotmail.com)

Abstract. The taxonomy of the species belonging to the genera *Ividia* Dall & Bartsch, 1904, *Folinella* Dall & Bartsch, 1904, *Oscilla* A. Adams, 1961, *Pseudoscilla* Böettger, 1901, *Tryptichus* Mörcz, 1875 and *Peristichia* Dall, 1889 from Brazil is reviewed. The following species are reported: *Ividia havanensis* (Pilsbry & Aguayo, 1933), *Folinella robertsoni* (Altena, 1975), *Pseudoscilla babylonia* (C. B. Adams, 1845), *Peristichia agria* Dall, 1889, *Oscilla somersi* (Verrill & Bush, 1900) and *Triptychus niveus* Mörcz, 1875; the last two species are for the first time recorded from Brazil. Four new species are described: *Triptychus litosbathron* n.sp. is characterized by its smooth base; *Oscilla notialis* n.sp. and *Oscilla aquilonia* n.sp. differ in the degree of projection of the protoconch nucleus, and both species are closely related to *Oscilla tornata* (Verrill, 1884), differing in details of spiral sculpture; and *Peristichia lepta* n.sp. is distinguished from other *Peristichia* species by its slender shell, absence of a columellar fold, and by the numerous spiral cords on the base.

Key Words: Mollusca, Pyramidellidae, Odostomiinae, taxonomy, Brazil, *Ividia*, *Folinella*, *Oscilla*, *Pseudoscilla*, *Tryptichus*, *Peristichia*.

INTRODUCTION

The family Pyramidellidae from Brazil is the subject of a major taxonomic review that has already yielded some published results (Pimenta et al., 2000; Pimenta & Absalão 2001a, 2001b, 2002, 2004a, 2004b; Absalão et al., 2003), in addition to others in preparation. In each of these papers, selected genera were studied, commonly resulting in amendments to the taxonomic status of pyramidellid species reported from Brazil, as well as revealing several new species and expanding the geographic distributions for known species in the Western Atlantic. In this paper we deal with the Odostomiinae and Pyramidellinae genera *Ividia* Dall & Bartsch, 1904, *Folinella* Dall & Bartsch, 1904, *Oscilla* A. Adams, 1861, *Pseudoscilla* Böettger, 1901, *Tryptichus* Mörcz, 1875 and *Peristichia* Dall, 1889.

The supraspecific classification of the family Pyramidellidae is controversial. There is no consensus about the status of most of the more than 300 generic or subgeneric names (Schander et al., 1999). Particularly, in most genera of the subfamily Odostomiinae,

the characters of the shell overlap somewhat, and clear differences cannot be established. While some authors (e.g., Dall & Bartsch 1904, 1909; Abbott 1974; Diaz & Puyana 1994) consider the genus *Odostomia* in a very broad sense, with many subgenera, others have been using many of these subgenera at full generic rank, giving rise to narrower definitions of each genus. Many of these genera have been interpreted differently in several studies in different geographic areas (e.g., Robertson 1978; Jong & Coomans 1988; Linden & Eikenboon 1992; Schander 1994; Peñas et al., 1996; Peñas & Rolán 1998; Redfern 2001, among others), often giving rise to different generic allocations for the same species. We believe that a consensus will be reached only after more detailed studies, including the careful comparison of type species, and eventually adding anatomical or molecular data.

Our goal, in this paper, is not to provide precise definitions for supraspecific taxa, but rather a more taxonomically accurate knowledge of the diversity and geographic range of the Brazilian pyramidellid fauna. In most cases, we adopted a conservative option,

following previous allocations of the species herein studied, thus avoiding new combinations. It should be clear, then, that most of the generic allocations used herein are to be considered provisional and changes based on new evidence are to be expected in the future.

Abbreviations used: –Collections: ANSP - Academy of Natural Sciences of Philadelphia, Philadelphia, USA; Col.Mol.UERJ - Coleção de Moluscos da Universidade do Estado do Rio de Janeiro; CR - collection Colin Redfern; DOUFPE - Departamento de Oceanografia da Universidade Federal de Pernambuco, Recife; IBUFRJ - Instituto de Biologia, Universidade Federal do Rio de Janeiro, Rio de Janeiro; MNHN - Muséum National d'Histoire Naturelle, Paris; MNRJ - Museu Nacional / Universidade Federal do Rio de Janeiro, Rio de Janeiro; MZSP - Museu de Zoologia da Universidade de São Paulo, São Paulo; USNM - National Museum of Natural History, Washington, DC; YPM - Peabody Museum of Natural History / Yale University, New Haven; ZMA - Zoölogisch Museum Amsterdam, Amsterdam; –Expeditions: AMASSEDS - A Multidisciplinary Amazon Shelf Sedimentary Study, Research Vessel “Columbus Iseling” Coll.; GEOMAR XII - Comissão Oceanográfica Geologia Marinha XII, NOAS Coll.; MD55 – Marion Dufresne Expedition; PADCT - Programa de Apoio ao Desenvolvimento Científico e Tecnológico. Research Vessel “Professor W. Besnard” coll.; REVIZEE - Recursos Vivos da Zona Econômica Exclusiva, Research Vessel “Professor W. Besnard” coll. (except when noted); –Collectors: AG - Research Vessel “Astro Garoupa,” Petrobras SA; Eq. Zoo Coll. - equipe do Departamento de Zoologia, IBUFRJ; NOAC - Research Vessel “Almirante Câmara,” Marinha do Brasil; NOAN - Research Vessel “Antares,” Marinha do Brasil; NOAS - Research Vessel “Almirante Saldanha,” Marinha do Brasil.

MATERIAL AND METHODS

The determination of the material was based on comparisons against type material and/or original descriptions and illustrations. In the material examined lists, the number inside brackets indicates the number of shells in each lot. This report is based entirely on empty shells from Brazilian and foreign collections. All lots from MNHN were collected along the northeast Brazilian coast by P. Maestrati from 1984 to 1989.

SYSTEMATICS

Subfamily Odostomiinae Pelscener, 1928

Genus *Ividia* Dall & Bartsch, 1904

Ividia Dall & Bartsch, 1904: 11. Type species: *Parthenia armata* Carpenter, 1857, Mazatlan, by original designation.

Ividia havanensis (Pilsbry & Aguayo, 1933)

(Figure 1A–E)

Odostomia (Miralda) havanensis Pilsbry & Aguayo, 1933: 118, pl. 6, fig. 4; Odé & Speers (1972: 9, not illustrated); Abbott (1974: 298, fig. 3627); Vokes & Vokes (1983: 32, pl. 30, fig. 12); Diaz & Puyana (1994: 235, pl. LXIX, fig. 934).

Miralda havanensis: Olsson & McGinty (1958: 44, pl. 1, fig. 8); Rios (1970: 134, 1975: 143, pl. 43, fig. 665, 1985: 165, pl. 54, fig. 784, 1994: 188, pl. 62, fig. 877); Jong & Coomans (1988: 124, pl. 6, 26, fig. 651); Mello (1990: 40, fig. 9); Barros (1994a: 74, not illustrated).

Ividia havanensis: Redfern (2001: 144, pl. 65, fig. 595).

Type material: Holotype ANSP 159722.

Type locality: La Chorrera, Habana, Cuba.

Material examined: Pará state: IBUFRJ 13693, AMASSEDS sta 3228, [1]; –Rio Grande do Norte state: DOUFPE 5012, sta 17 (05°01.317'S / 36°23.507'W, 9.1 m), 05/iiiv/2002, [1]; DOUFPE 5013, sta 30 (04°47'30.837"S / 36°40'02.678"W, 17.3 m), 27/vii/2002, [1]; –Pernambuco state: IBUFRJ 11153, Ilha Rata, Fernando de Noronha Archipel, 08/vii/1999, [3]; MNHN, Cabo (enseada dos corais), [16]; MNHN, Cabo (praia de Gaibu), [12]; MNHN, São Luiz (areia preta) Maranhão, [3]; MNHN, Paulista (Maria Faria), [2]; MNRJ 10822, Paulista (praia da Conceição), [2]; MNHN, Recife (praia do Pina), [2]; MNHN, environs de Recife, [6]; MNHN, Cabo (Pedras Pretas), [8]; MNHN, Paulista (praia da Conceição), [1]; –Sergipe state: DOUFPE 5011, sta 9.2 (11°30'08"S / 37°07'56"W, 1031 m), 19/iv/2002, [1]; –Bahia state: IBUFRJ 6374, off Abrolhos, 1990, [3]; –Espírito Santo state: IBUFRJ 8573, off Camburi, 1993, [15]; IBUFRJ 8998, off Aracruz, 18/xii/1989, [1]; IBUFRJ 8481, off Piúma, 1993, [1]; IBUFRJ 8656, off Piúma, 1993, [1]; –Rio de Janeiro state: Col.Mol.UERJ 1977, Enseada de Dois Rios, Ilha Grande, 19–20/xi/1996, [1]; Col.Mol.UERJ 3336, Ilha Grande sta 16 (Rochedo São Pedro, 23°2.868'S / 44°32.722'W, 10 m), [1]; Col.Mol.UERJ 3349, Ilha Grande sta 15 (Ponta Grande Timuiba, 23°3.762'S / 44°36.038'W, 7 m), [8]; IBUFRJ 13688, praia da Figueira, Angra dos Reis, 1998, [7]; –São Paulo state: MZSP 86785, PADCT sta 6577 (25°15.76'S / 45°04.62'W, 124 m), off São Paulo state [1].

Distribution: USA: Florida (Abbott 1974), Texas (Odé & Speers 1972); Caribbean: Habana, Cuba (Pilsbry & Aguayo 1933); Yucatan Peninsula, Mexico (Vokes & Vokes 1983); Panama (Olsson & McGinty 1958); Colombia (Diaz & Puyana 1994); Bahamas (Redfern 2001); Aruba, West Indies (Jong & Coomans 1988); Brazil: Atol das Rocas and Alagoas (Rios 1994);

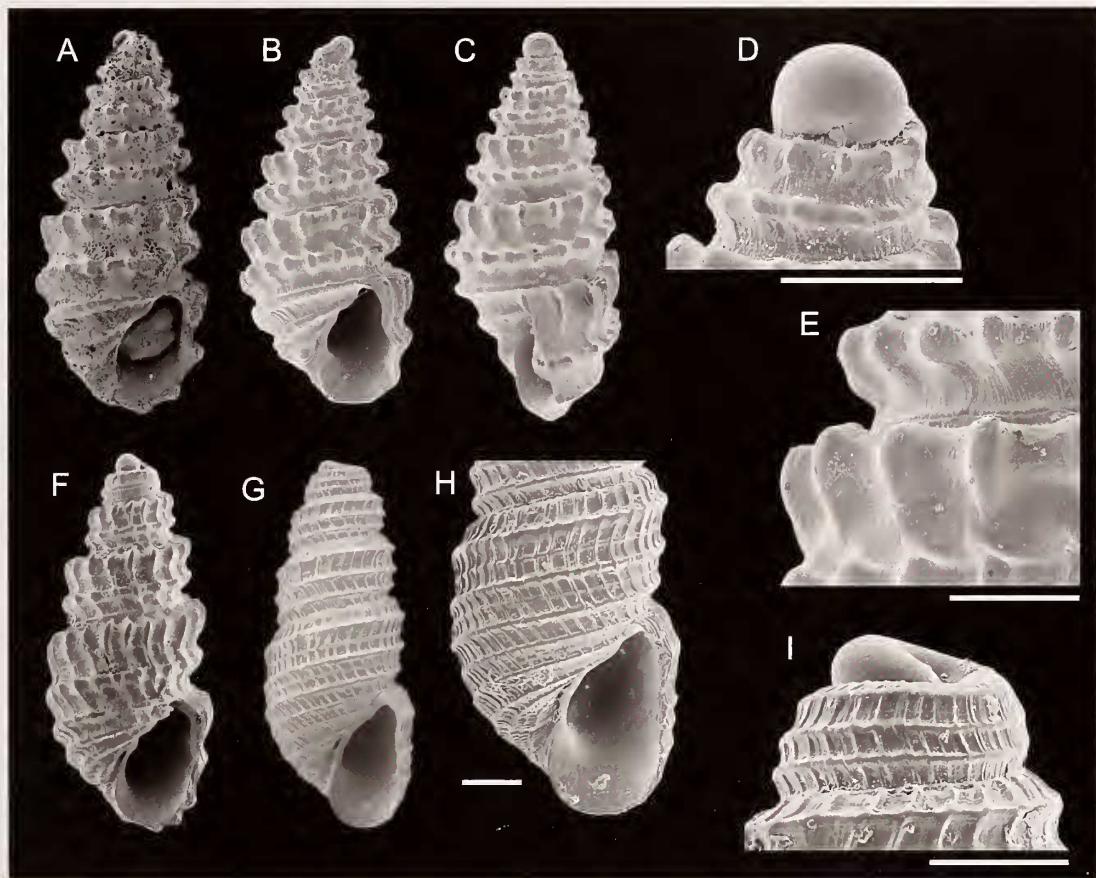


Figure 1. A–E, *Ividia havanensis* (Pilsbry & Aguayo, 1933): A, holotype (ANSP 159722); B, E, MNRJ 10822; C–D, Col. Mol. UERJ 1977. A–C, whole shells (respective lengths: 1.9 mm; 1.7 mm; 1.7 mm); D, protoconch; E, detail of last whorl; F, holotype of *Ividia abbotti* (Olsson & McGuinty, 1958) (ANSP 211912, length: 2.0 mm); G–I, *Folinella robertsoni* (Altena, 1975) (MNRJ 10823); G, whole shell (length: 1.6 mm); H, last whorl; I, protoconch. Scale bars: 200 μ m.

Canopus, Ceará (Barros 1994a); Pernambuco (Mello 1990; this study); Pará, Rio Grande do Norte, Fernando de Noronha Archipel, Maranhão, Sergipe, Bahia, Espírito Santo, Rio de Janeiro and São Paulo (this study).

Remarks: The genus *Ividia* was proposed by Dall & Bartsch (1904) as a subgenus of *Odostomia*. This taxon was later synonymized under *Miralda* A. Adams, 1863 by Dall & Bartsch (1909, p. 172), who argued that the type species that they selected for *Ividia* (*Parthenia armata* Carpenter, 1857) should be referred to *Miralda*.

Ividia havanensis (Figure 1A–E), *Ividia abbotti* (Olsson & McGuinty, 1958) (Figure 1F) and also *Folinella robertsoni* (see discussion below) were, in fact, included in *Miralda*, as a full genus (Olsson & McGuinty 1958; Altena 1975; Rios 1994; Jong & Coomans 1988) and as a subgenus of *Odostomia* (Pilsbry & Aguayo 1933; Odé & Speers 1972; Abbott 1974; Vokes & Vokes 1983; Diaz & Puyana 1994).

Although Schander et al. (1999) adopted the synonymy between *Miralda* and *Ividia*, Odé (1993),

on the other hand, considered that *Parthenia armata* is not congeneric with the type species of *Miralda* (*Parthenia diadema* A. Adams, 1860), and therefore considered *Ividia* a valid genus. This position was followed by Turgeon et al. (1998) and Redfern (2001).

In fact, the illustration of *Miralda diadema* provided by Dall & Bartsch (1906, pl. XVII, fig. 2) is quite distinct from the illustration of *Ividia armata* by Dall & Bartsch (1909: pl. 19, fig. 6). *Ividia armata* has a conical shell with two strong nodulose spiral cords in each teleoconch whorl, and weaker spiral cords on the base; whereas *Miralda diadema* has a somewhat globose shell with a pattern of axial ribs and spiral cords forming nodules where they cross. We, therefore, follow Odé (1993) in considering *Ividia* a valid genus.

Considering *Ividia* valid, Odé (1993) included *Ividia abbotti*; Redfern (2001) included *Ividia havanensis* and *Ividia robertsoni*. However, while we agree with Odé (1993) and Redfern (2001) in regard to *I. abbotti* and *I. havanensis*, we propose the new combination *Folinella robertsoni* (see below). We consider that the shell of the

latter differs considerably from typical *Ividia* species, in having three spiral cords in each whorl, crossed by thin axial ribs, lacking the nodulose spiral cords (Figure 1G–H), which fits well with the description of *Ividella* by Dall & Bartsch (1909: 172–174, pl. 18, figs. 11, 11a).

Lia decorata Folin, 1873 was referred to *Miralda* by Odé & Speers (1972: 9) and may prove to be an additional species of *Ividia*, because the shell also has the nodulose spiral cords. Faber (1988) stated that “*Odostomia havanensis* Pilsbry & Aguayo, 1933 = *Lia decorata* De Folin, 1873,” but provided no further discussion on this possible synonymy. The illustration provided by de Folin (1873: pl. 6, fig. 8) indeed resembles *I. havanensis*, but has a shell with spiral nodules very close to each other and with more rounded summits.

Besides the records from the east coast of the U.S.A. and the Caribbean, *Ividia havanensis* was listed and illustrated from Brazil by Rios (1994), in the genus *Miralda*; however, Rios provided no illustrations of specimens from Brazil, but reproduced the original figure. Other records from Brazil include those of Mello (1990) and Barros (1994a), from two localities on the northeast coast. We now present records of this species from nearly the entire Brazilian north, northeast and southeast coast, considerably enlarging its known geographic range in the Western Atlantic, to about 25°S.

Genus *Folinella* Dall & Bartsch, 1904

Folinella Dall & Bartsch, 1904: 10, *nom. nov. pro* *Amoura* de Folin, 1873 *non Amoura* Forbes, 1845. Type species: *Amoura angulifera* de Folin, 1873, by monotypy.

Folinella robertsoni (Altena, 1975)
new combination

(Figure 1G–I)

Miralda robertsoni: Altena (1975: 75, fig. 30a–b); Mello (1990: 40, fig. 8); Rios (1994: 188, pl. 62, fig. 878); Barros (1994b: 44, fig. 12a).

Odostomia (*Miralda*) *cf. robertsoni*: Diaz & Puyana (1994: 235, pl. LXIX, fig. 935).

Ividia robertsoni: Redfern (2001: 144, pl. 65, fig. 596).

Type locality: Shell ridge near Cupido on the Maratakka, Nickerie District, Suriname.

Material examined: Rio Grande do Norte state: DOUFPE 5015, sta 01 (05°04.260'S / 36°20.303'W, 3.6 m), 06/viii/2002, [2]; –Pernambuco state: MNHN, Paulista (Maria Farinha), [19]; MNHN Cabo (praia de Gaibu), [10]; MNRJ 10823 Paulista (praia da Conceição), [5]; MNHN Cabo (enseada dos corais), [8]; MNHN Raposa (praia de Raposa), [15]; MNHN Itamaracá (praia de Jaguaribe), [1]; MNHN Recife

(praia de Candeias), [8]; MNHN Recife (praia do Pina), [8]; MNHN Recife (praia do Pina), [11]; – Maranhão state: MNHN São Luiz (areia preta), [5]; – Espírito Santo state: IBUFRJ 10856, Baía de Vitória, 18/xii/1998, [2]; –Rio de Janeiro state: IBUFRJ 7477, off Arraial do Cabo, 1993, [2]; Col.Mol.UERJ 3340, Ilha Grande sta 15 (Ponta Grande Timuiba, 23°3.762'S / 44°36.038'W, 7 m), [2]; Col.Mol.UERJ 3351, Ilha Grande sta 15 (Ponta Grande Timuiba, 23°3.762'S / 44°36.038'W, 7 m), [2]; IBUFRJ 13689, Angra dos Reis (praia da Figueira), 1998, [4].

Distribution: Suriname (Altena 1975); Caribbean: Colombia (Diaz & Puyana 1994); Bahamas (Redfern 2001); Brazil: Pernambuco, Maranhão (Mello 1990; Barros 1994b; this study); Rio Grande do Norte; Espírito Santo; Rio de Janeiro (this study).

Remarks: The taxonomy and nomenclature of *Folinella* were discussed by Aartsen (1984), Aartsen et al. (1998) and Schander et al. (1999), who considered it as a senior synonym of *Ividella* Dall & Bartsch, 1909. As demonstrated by Aartsen (1984), the type species of *Folinella* is *Amoura angulifera*. This genus is characterized by numerous axial and two to three spiral ribs, equally strong and forming small knobs at their crossings; this sculpture invades the base of the shell. The same pattern of sculpture can be found in some of the species listed by Dall & Bartsch (1909) in the genus *Ividella*, which should thus be referred to *Folinella* (e.g., *F. quinquecincta* Carpenter, 1856, *F. delmontensis* Dall & Bartsch, 1907, *F. navisa* Dall & Bartsch, 1909, *F. araniana* Dall & Bartsch, 1909).

The species herein included in *Folinella* was considered to belong in *Miralda*, as a full genus (Altena, 1975; Mello, 1990; Rios, 1994; Barros, 1994b) or as a subgenus of *Odostomia* (Diaz & Puyana, 1994). Redfern (2001), on the other hand, used the combination *Ividia robertsoni*.

The new combination *Folinella robertsoni* is proposed herein based on similarities to the concept of *Folinella*, as adopted by Aartsen et al. (1998). *Folinella robertsoni* has three spiral cords in each whorl, crossed by thin axial ribs, with small nodulose spiral cords (Figure 1G–I), which fits well within the concept of *Folinella* (*fide* Aartsen et al., 1998).

Folinella robertsoni was listed and illustrated by Rios (1994), in the genus *Miralda*. He provided no illustrations of specimens from Brazil, but reproduced the original figure, and recorded the range of the species in Brazil as “northeast.” Other records from northeastern Brazil are those of Mello (1990) and Barros (1994a). The present paper enlarges the known geographic range of *F. robertsoni* in the Western Atlantic up to about 23°S, on the coast of Rio de Janeiro.

Genus *Oscilla* A. Adams, 1861

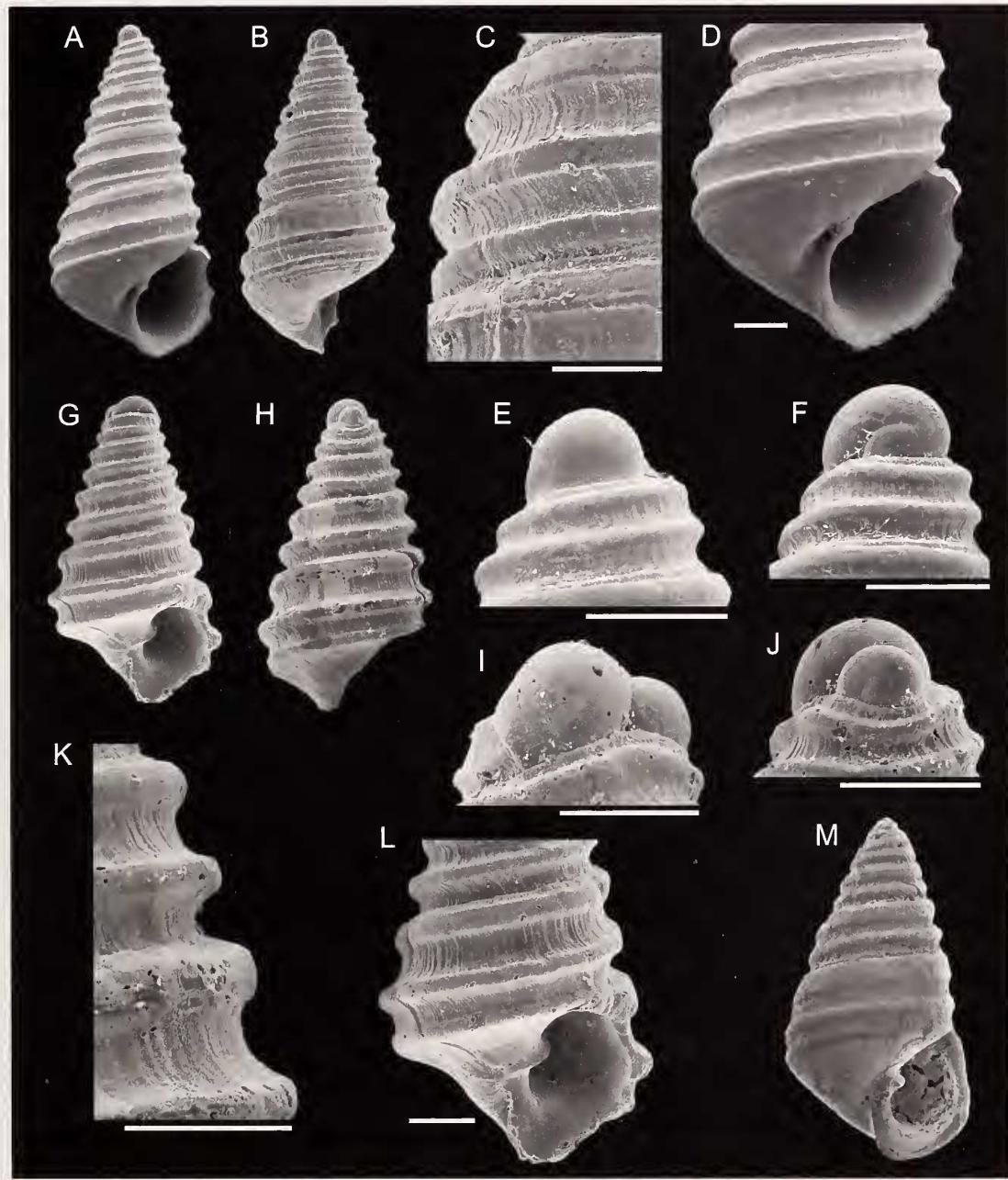


Figure 2. A–F, *Oscilla notialis* n.sp.: A–E, holotype (MNRJ 10692); F, paratype (IBUFRJ 7595); A–B, whole shell (length: 1.9 mm); C, detail of sculpture on last whorl; D, Last whorl; E–F, protoconch; G–L, *Oscilla aquilonia* n.sp.: holotype (MNRJ 10825); G–H, whole shell (length: 1.53 mm); I–J, protoconch; K, detail of sculpture on last whorl; L, last whorl; M, holotype of *Oscilla tornata* (Verrill, 1884) (USNM 30083). Scale bars: 200 μ m.

Oscilla A. Adams, 1861. Type species: *Monoptygma* (*Oscilla*) *cingulata*.

Oscilla notialis n.sp.

(Figure 2A–F)

Type material: Holotype: MNRJ 10692, off Sergipe

state, sta 2.1 (11°23'21"S / 37°04'30"W, 99 m), 16/iv/2002. Paratypes: –Sergipe state: IBUFRJ 14077, type locality [3]; DOUFPE 5000, type locality, [9]; DOUFPE 5006, sta 2.3 (11°24'14"S / 37°05'08"W, 99 m), 16/iv/2002, [2]; –Espírito Santo state: IBUFRJ 14082, off Espírito Santo state, REVIZEE Central I sta D1 (20°48'72"S / 41°09'33"W), 23/ii/1996, [1]; –Rio de Janeiro state: IBUFRJ 12316, Cabo Frio VII sta 6194,

off Rio de Janeiro state, iii/1983, [2]; MNHN, Cabo Frio VII sta 6194, off Rio de Janeiro state, iii/1983, [3]; IBUFRJ 9627, Arquipélago de Santana sta 2, Macaé, 3–5/v/1993, AG coll., [1]; IBUFRJ 6934, off Rio de Janeiro state, GEOMAR XII sta 89 (21°47.8'S / 40°16'W), 28/viii/1979, [3]; IBUFRJ 7595, off Rio de Janeiro state, GEOMAR XII sta 76 (21°57'S / 40°51'W), 28/viii/1979, [2]; MZSP 86791, PADCT sta 6617 (21°51.6'S / 47°42'W, 327 m), off Rio de Janeiro state [5]; –São Paulo state: MZSP 89799, REVIZEE sta 6662 (24°00.95'S / 43°55.54'W, 135 m), [11]; MNRJ 10942, REVIZEE sta 6669 (24°7.42'S / 44°42.22'W, 101 m), [8]; MZSP 86792, PADCT sta 6571 (24°12.74'S / 44°58.98'W, 79 m), [29]; MZSP 86800, REVIZEE sta 6666 (24°17.13'S / 44°12.15'W, 163 m), [1]; MZSP 86797, PADCT sta 6579 (24°42.302'S / 45°18.831'W, 84 m), [1]; MZSP 86787, PADCT sta 6573 (24°42.608'S / 44°43.419'W, 155 m), [1]; MZSP 86794, PADCT sta 6577 (25°15.76'S / 45°04.62'W, 124 m), [14]; MZSP 86788, PADCT sta 6541 (26°15'S / 45°53'W, 130 m), [5]; –Paraná state: MZSP 86790, PADCT sta 6631 (25°46'S / 45°28.8'W, 164 m), [2]; –Santa Catarina state: MZSP 86798, PADCT sta 6595 (26°23.55'S / 46°39.49'W, 175 m), [9]; MZSP 86801, PADCT sta 6641 (26°15'S / 45°53'W, 130 m), [1]; MNHN, REVIZEE sta 6695 (26°17.134'S / 46°41.788'W, 153 m), [3]; MZSP 86793, PADCT sta 6606 (27°48.07'S / 47°24.04'W, 175 m), [1]; MZSP 86795, PADCT sta 6635 (27°10.38'S / 47°27.54'W, 129 m), [2].

Type locality: off Sergipe state coast (11°23'21"S / 37°04'30"W, 99 m).

Distribution: Only known from Brazil. Northeast coast: Rio Grande do Norte and Sergipe states; southeast and south coasts: Espírito Santo, Rio de Janeiro, São Paulo, Paraná and Santa Catarina states.

Etymology: From the Latin *notialis*: southern. Referring to the main distribution area of this species, in southern latitudes off Brazil.

Diagnosis: *Oscilla* species with planispiral heterostrophic protoconch; strongly conical shell bearing wide spiral cords and grooves in teleoconch whorls, and an additional, narrower spiral cord above the suture, variably expressed.

Description: Shell conic, holotype 1.9 mm in length. Teleoconch with up to 5 whorls with crenulated outline. Suture deep. Protoconch heterostrophic planispiral, with about 1.5 whorls, smooth, forming an angle of about 90° to shell main axis, diameter about 200 µm. Spiral sculpture formed by three cords: the widest cord just above the suture; a second cord of medium width in the middle of each whorl; and a third, narrower cord just above the suture, partially covered by the subsequent whorl, almost inconspicuous in early

whorls; between the cords, there are two wide spiral furrows with microscopic axial growth lines. Base slightly convex, with microscopic axial ribs and with its adapical periphery marked by a peripheral, smooth spiral cord that corresponds to the third spiral cord in the teleoconch whorls, and bordered adapically by two additional, very thin spiral cords; with a chink-like umbilicus. Aperture rhomboid, with a columellar fold somewhat projected. Outer lip thin and slightly crenulated.

Oscilla aquilonia n.sp.

(Figure 2G–L)

Type material: Holotype: MNRJ 10825, off Pará state, AMASSEDS sta 3228 (03°25.1'N, 49°56.4'W, 64 m), 17/v/1990, RVCI coll. Paratypes: IBUFRJ 4169, type locality, [1]; IBUFRJ 14895, type locality, [3]; MNHN, type locality, [2]; MNRJ 10819, type locality, [3]; IBUFRJ 14897, off Pará state, AMASSEDS sta 4134, RVCI coll., [1].

Type locality: off Pará state, north Brazilian coast - AMASSEDS sta 3228 (03°25.1'N, 49°56.4'W, 64 m).

Distribution: Only known from Pará state, north Brazil.

Etymology: From the Latin *aquilonius*: north. Referring to the occurrence of this species on the northern coast of Brazil.

Diagnosis: *Oscilla* species with helicoid heterostrophic protoconch with strongly projected nucleus; conical shell bearing wide spiral cords and grooves in teleoconch whorls, and an additional, narrower spiral cord above the suture, variably expressed.

Description: Shell conic, holotype 1.14 mm in length. Teleoconch with up to three whorls, with crenulated outline. Suture deep. Protoconch heterostrophic helicoid, with about 1.5 whorls, well projected, smooth, forming an angle of about 90° to shell main axis, diameter about 200 µm. Spiral sculpture formed by three cords: the widest cord just above the suture; a second cord of medium width in the middle of each whorl; and a third, narrower cord, just above the suture, partially covered by the subsequent whorl, almost inconspicuous in early whorls; between the cords, there are two wide spiral furrows with microscopic axial growth lines. Base slightly convex, with microscopic axial ribs and with its adapical periphery marked by a peripheral, smooth spiral cord that corresponds to the third spiral cord in the teleoconch whorls; with a small chink-like umbilicus. Aperture rhomboid, with a columellar fold, medium projected. Outer lip thin and slightly crenulated.

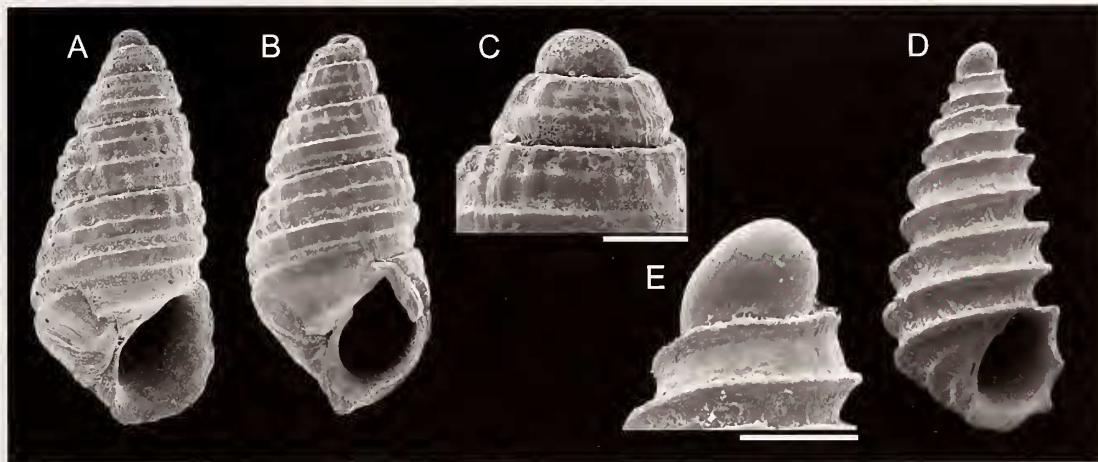


Figure 3. A–C, *Oscilla somersi* (Verrill & Bush, 1900) (IBUFRJ 13667): A–B, whole shells (respective lengths: 1.5 mm; 1.6 mm); C: protoconch; D–E, *Pseudoscilla babylonia* (C. B. Adams, 1845) (IBUFRJ 8490): D, whole shell (length: 1.6 mm); E, protoconch. Scale bars: 200 μ m.

Oscilla somersi (Verrill & Bush, 1900)
new combination
(Figure 3A–C)

Odostomia (Evalea) somersi Verrill & Bush, 1900: 533, pl. 65, fig. 7.
Miralda havanensis auct non (Pilsbry & Aguayo, 1933): Sá et al. (1984: 7, fig. 41).
Menestho somersi: Jong & Coomans (1988: 124, pl. 6, fig. 652); Redfern (2001: 144, pl. 65, fig. 598A; pl. 66, fig. 598B).
Boonea somersi: Odé (1993: 55, not illustrated).
Boonea someri (sic): Wise (2001: 74, not illustrated).

Type locality: Bermuda.

Material examined: Bahamas Islands: CR 3641, 26°39'N, 77°18'W, 0.3 m, 20/vii/1982 [5]; CR 10098, NE of Chub Rocks (26°44'N, 77°12'W, 23 m), 12.vii.1992 [1]; –West Indies: ZMA, Aruba, F. Verbene coll. [28]; ZMA, Curaçao, Jong coll. [2]; –Brazil: –Espírito Santo state: IBUFRJ 8689, off Piúma, [36]; –Rio de Janeiro state: IBUFRJ 13667, Praia da Figueira, Angra dos Reis, C. Alvarenga coll. [14]; MNHN, Praia da Figueira, Angra dos Reis, C. Alvarenga coll. [6]; MNRJ 10820, Praia da Figueira, Angra dos Reis, C. Alvarenga coll. [6]; coll. Mol. UERJ 5961, Ponta do Pinto, Enseada de Parati-Mirim (23°13.249'S / 44°38.950'W, 5 m), Ilha Grande Bay, [12]; coll. Mol. UERJ 6213, Ponta Grande Timuiba (23°3.762'S / 44°36.038'W, 9 m), Ilha Grande Bay, [22]; coll. Mol. UERJ 6244, Ponta Escalvada, Ilha da Gipóia (23°1.911'S / 44°22.734'W, 11 m), Ilha Grande Bay, [35]; coll. Mol. UERJ 6234, Ilha Comprida, Baía de Ribeira (23°57.724'S / 44°22'W, 9 m), Ilha Grande Bay

[17]; coll. Mol. UERJ 6256, Laje do Coronel (23°5.884'S / 44°24.410'W, 23 m), Ilha Grande Bay [15].

Distribution: USA: Texas (Odé 1993); Caribbean: Bermuda (Verrill & Bush 1900); Bahamas (Redfern 2001); Curaçao, West Indies (Jong & Coomans 1988); Brazil: southeast coast (this study).

Remarks: The genus *Oscilla* was proposed as subgenus of *Monoptygma* by A. Adams (1861) and diagnosed with elevate spiral cords, aperture subquadrate, with a columellar fold. Tryon (1886) used *Oscilla* as a section in the *Pyramidellida* subgenus *Syrnola*. Van Aartsen (1994) used *Oscilla* as a full genus, recording *Oscilla jocosa* from Mediterranean. Schander et al. (1999) considered *Oscilla* as a genus in the subfamily Chrysallidinae.

The three species herein included in this genus fit well such diagnosis, with a conical shell, strong spiral cords and a distinctly visible columellar fold.

Other pyramidellid genera have a similar pattern of strong spiral cords, such as *Pseudoscilla*, *Cingulina* and *Menestho*. *Oscilla somersi* (new combination here proposed), for example, has already being allocated to the genus *Menestho* by Jong & Coomans (1988) and Redfern (2001). However, *Menestho* is a genus originally described based on *Turbo albulus* Fabricius, 1780, a species from Greenland. Also, *Oscilla somersi* was included in *Boonea* by Odé (1993) and Wise (2001), a position with which we do not agree, since *Boonea* has three nodulose spiral cords in each whorl.

The original figure of *Oscilla somersi* shows smooth spiral cords. In the shells from Brazil and the West Indies that we examined, we could find some variation in the first two spiral cords, which range from almost completely smooth to sculptured with small nodules of

varying strength. The shell illustrated by Redfern (2001) also bears somewhat nodulose spiral cords, but some variation in the spiral ridges also can be found (Redfern, personal communication). Odé (1993), although expressing doubts about his generic allocation, found variation in the spiral ridges too. According to Johnson (1989), the shells in a lot labeled as syntypes (YPM 15710) do not correspond to this species.

Oscilla notialis (Figure 2A–F) and *Oscilla aquilonia* (Figure 2G–L) differ from the holotype of *Oscilla tornata* Verrill, 1884 (new combination, herein proposed), from off Cape Hatteras, U.S.A. (Figure 2M), in respect to the very narrow upper spiral cord and wider spiral grooves between the cords. Furthermore, Verrill (1884) did not report an additional, narrower spiral cord above the suture, which is found in *Oscilla notialis* (Figure 2A–B) and also in very similar specimens from Abaco (Bahamas), named *Oscilla* sp. B by Redfern (2001: pl. 65, fig. 600), which may prove to be this species too. This additional spiral cord is a variable character, being stronger in some shells and absent in others. In *Oscilla aquilonia*, an additional, suprasutural cord may also be present, to a variable degree (Figure 2G, E).

Oscilla aquilonia is very similar to *Oscilla notialis*, but has a helicoid protoconch (Figure 2I–J), whereas *Menestho notialis* has a planispiral one (Figure 2E–F). Furthermore, *O. aquilonius* does not have the two thin spiral cords at the periphery of the last whorl and abapically adjacent to the suture, as seen in *O. notialis* (Figure 2C–D).

Oscilla notialis shows a wide range of variation, both in shell size (up to five teleoconch whorls) and ornamentation (spiral cords sometimes with subquadrate edges, and umbilicus wider in some shells). *Oscilla aquilonia*, on the other hand, is consistently smaller, with almost no variation in the above characters. In spite of the variation found in *M. notialis*, the protoconch is always planispiral (Figure 2E–F).

This is the first record of *Oscilla somersi* from the southwestern Atlantic, where it has been collected off the southeast Brazilian coast (about 23°S). *Oscilla notialis* has a wide range of distribution in Brazil, from the northeast (about 4°S) to the southeast coast (about 20°S). *Oscilla aquilonia*, on the other hand, was found only in northern localities (about 03°N).

Genus *Pseudoscilla* Böettger, 1901

Pseudoscilla Böettger, 1901. Type species: *Oscilla (Pseudoscilla) miocaenica* Böettger, 1901.

Pseudoscilla babylonia (C. B. Adams, 1845)

(Figure 3D–E)

Chemnitzia babylonia C. B. Adams, 1845: 6: Odé &

Speers (1972: 6, not illustrated); Clench & Turner (1950: 259, not illustrated)

Chemnitzia (Miralda) babylonia: Mörch (1875: 165, not illustrated).

Odostomia (Cingulina) Babylonica: Tryon (1886: 358, not illustrated).

Chemnitzia Babylonica: Bush (1899: 176, not illustrated).

Odostomia (Cingulina) Babylonica: Verrill & Bush (1900: 534, pl. LXV, fig. 11).

Menestho babylonia: Odé & Speers (1972: 8, not illustrated).

Odostomia (Miralda) judithae Newell-Usticke (1959: 86): synonymized by Jong & Coomans (1988).

Cingulina babylonia: Warmke & Abbott (1962: 148, not illustrated); Abbott (1974: 301, not illustrated); Rios (1985: 165, pl. 54, fig. 785, 1994: 188, pl. 62, fig. 876); Vokes & Vokes (1983: 32, pl. 30, fig. 19); Jong & Coomans (1988: 120, pl. 19, fig. 637); Mello (1990: 41, fig. 10).

Cingula babylonia: Oliveira (1992: 285, not illustrated).

Pseudoscilla babylonia: Odé (1993: 58, not illustrated).

Odostomia babylonia: Wise (1996: 445, figs. 13a–e); Redfern (2001: 142, pl. 64, fig. 585).

Type material: lost (Clench & Turner 1950)

Type locality: Jamaica.

Material examined: Pernambuco state: MNHN, Cabo (praia de Gaibu), [1]; –Bahia state: MNHN, Itaparica (praia do Vera Cruz), [1]; MNHN, MD55 sta DC73 (18°59'S / 37°48'W, 607–620 m), Abrolhos Archipel Continental slope, Bouchet, Leal, Metivier coll. [2]; –Espírito Santo state: IBUFRJ 8490, off Piúma 1993, [3]; MNRJ 10821, off Piúma 1993 [1]; –Rio de Janeiro state: IBUFRJ 6975, GEOMAR XII sta 111, 29/vii/1979, NOAC coll., [1]; IBUFRJ 7071, Cabo Frio VII sta 6194 (24° 03,6' S / 044° 07,6' W, 134 m), iii/1983, NOAS coll., [1]; IBUFRJ 7836, GEOMAR XII sta 96 (22°05'S / 40°17,4'W), NOAC coll., [1].

Distribution: USA: Florida (Wise 1996), Texas (Odé 1993); Caribbean: West Indies (Jong & Coomans 1988), Bermuda (Verrill & Bush 1900), Bahamas (Redfern 2001); Brazil: Pernambuco state (Mello 1990; this study), Bahia (Oliveira 1992), Espírito Santo state (this study), Rio de Janeiro state (Rios 1994; this study).

Remarks: *Pseudoscilla babylonia* (Figure 3D–E) has been reported from Brazil and other regions in the western Atlantic as *Cingulina babylonia* (Warmke & Abbott 1962; Rios 1985, 1994; Abbott 1974; Vokes & Vokes 1983; Jong & Coomans 1988; Mello 1990) or *Odostomia babylonia* (Wise 1996; Redfern 2001). Odé (1993) stated that the genus *Cingulina* is normally and wrongly used for species from the western Atlantic, and

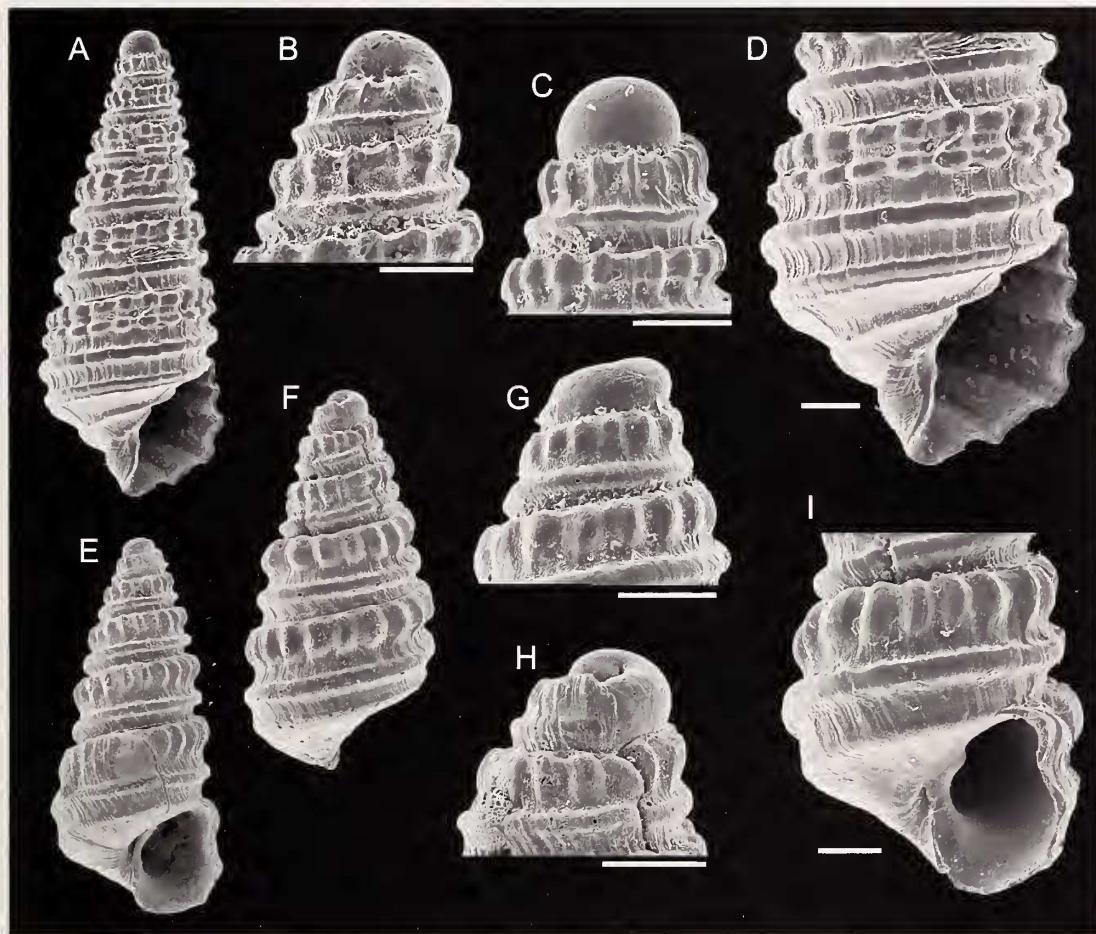


Figure 4. A–D. *Triptychus niveus* Mörch, 1875 (IBUFRJ 14080): A, whole shell (length: 2.7 mm); B–C, protoconchs; D, last whorl; E–I. *Triptychus hitosbathron* n.sp.: E, holotype (MZSP 77065); F–G, paratype (MZSP 77066); H–I, paratype (IBUFRJ 12878); E–F, whole shells (respective lengths: 2.4 mm; 1.6 mm); G–H, protoconchs; I, last whorl. Scale bars: 200 µm.

introduced the combination *Pseudoscilla babylonia*, establishing that *Pseudoscilla* is not related to *Cingulina*. According to Odé (1993), *Pseudoscilla* is characterized by small, regularly conical shells, with sculpture consisting of strongly developed spiral cords, sometimes dissolved into separate knobs; *Cingulina*, on the other hand has more elongate shells, less strongly ornamented, and is restricted to the Pacific Ocean (Odé 1993).

Aartsen et al. (1998) reported *Pseudoscilla babylonia* from the North Atlantic Ocean. However, Peñas & Rolán (1999) reviewed the genus *Pseudoscilla* from West Africa, providing illustrations of the type-species (*Pseudoscilla miocaenica*), and concluded that the records of *P. babylonia* by Aartsen et al. (1998) were based on misidentifications of *Pseudoscilla bilirata* (Folin, 1870). According to Peñas & Rolán (1999), *Pseudoscilla babylonia* is restricted to the Western Atlantic.

Subfamily Pyramidellinae Gray, 1840

Genus *Triptychus* Mörch, 1875

Triptychus Mörch, 1875: 158. Type species: *Triptychus niveus* Mörch, 1875, by monotypy, St. Thomas.

Triptychus niveus Mörch, 1875

(Figure 4A–D)

Obeliscus (*Triptychus*) *niveus* Mörch (1875: 159).

Triptychus niveus: Abbott (1974: 300, fig. 3653); Warmke & Abbott (1962: 147, pl. 28e); Vokes & Vokes (1983: 32, pl. 30, fig. 17); Jong & Coomans (1988: 120, pl. 19, fig. 636); Diaz & Puyana (1994: 236, pl. LXIX, fig. 941); Redfern (2001: 145, pl. 65, fig. 603).

Triptychus niveus: Rehder (1943: 195, not illustrated)

Pyramidella vincula Dall, 1884: Synonymized by Abbott (1974).

Type locality: St. Thomas, Vieques, St. Martin.

Material examined: West Indies: IBUFRJ 14080, off Bonaire (12 m), 30.i.1998, [2]; IBUFRJ 14083, off Bonaire (4 m), 14.ii.1998, [1]; IBUFRJ 14084, off Bonaire (10 m), 30.i.1998, [1]; –Brazil: –Rio de Janeiro state: IBUFRJ 14078, Arquipélago de Santana, Macaé, v.1983, AG coll., [1]; IBUFRJ 14079, Bacia de Campos sta 22, [1].

Distribution: USA: Florida to West Indies (Abbott 1974; Warmke & Abbott 1962); Mexico: Yucatan Peninsula (Vokes & Vokes 1983); Caribbean: St. Thomas (Mörcz 1875), Bahamas (Redfern 2001), West Indies (Rehder 1943; Jong & Coomans 1988), Colombia (Diaz & Puyana 1994); Brazil: Rio de Janeiro (this study).

Triptychus litosbathron n.sp.

(Figure 4E–I)

Type material: Holotype MZSP 77065, off Paraná state, PADCT 6577 ($25^{\circ}15.76'S$ / $45^{\circ}04.62'W$, 124 m). Paratypes: –Espírito Santo state: IBUFRJ 14081, off Espírito Santo state, REVIZEE sta vv24 ($20^{\circ}S$ / $34^{\circ}54'W$, 45 m), 27.ii.1996, NOAN coll., [1]; MNHN, off Espírito Santo state, REVIZEE sta vv24 ($20^{\circ}S$ / $34^{\circ}54'W$, 45 m), 27.ii.1996, NOAN coll., [1]; IBUFRJ 12878, off Espírito Santo state, REVIZEE sta D1 ($20^{\circ}48'S$ / $41^{\circ}09'33''W$, 69 m), 23.ii.1996, NOAN coll., [1]; MNRJ 10694, off Espírito Santo state, REVIZEE sta D1 ($20^{\circ}48'S$ / $41^{\circ}09'33''W$, 69 m), 23.ii.1996, NOAN coll., [1]; –São Paulo state: MZSP 86686, REVIZEE sta 6677 ($24^{\circ}40.75'S$ / $44^{\circ}50.82'W$, 137 m), [1]; MZSP 86688, REVIZEE 6662 ($24^{\circ}00.95'S$ / $43^{\circ}55.54'W$, 135 m), [5]; MZSP 86691, REVIZEE 6666 ($24^{\circ}17.13'S$, $44^{\circ}12.15'W$, 163 m), [1]; MNHN, PADCT 6573 ($24^{\circ}42.608'S$ / $44^{\circ}43.419'W$, 155 m), [1]; –Paraná state: MZSP 77066, type locality, [1]; MNRJ 10941, type locality, [5]; –Santa Catarina state: MZSP 86693, PADCT sta 6641 ($26^{\circ}15'S$ / $45^{\circ}53'W$, 130 m) [1]; MZSP 86694, REVIZEE 6695 ($26^{\circ}17.134'S$, $46^{\circ}41.788'W$, 153 m), [1]; MZSP 86695, PADCT 6606 ($27^{\circ}48.07'S$ / $47^{\circ}24.04'W$, 175 m), [1].

Type locality: $25^{\circ}15.76'S$ / $45^{\circ}04.62'W$, 124 m; off Paraná state, Brazil.

Distribution: Only known from Brazil southeast-south coast: Espírito Santo state, São Paulo state, Paraná state.

Etymology: From the Greek *litos*: plain, simple; *-bathron*: base, pedestal. In allusion to the simple, unornamented base of this species.

Diagnosis: Small *Triptychus* species with smooth base, immersed protoconch and small chink-like umbilicus.

Description: Shell conic, holotype 2.4 mm in length. Teleconch with up to 5.5 whorls with sinuous outline, due to projections of whorl ornamentation. Suture deep. Protoconch heterostrophic with about 1.5 smooth whorls, with nucleus immersed in first teleoconch whorl, forming an angle of about 180° with teleoconch main axis; diameter about 250 μm . Two deep and wide, channeled spiral furrows, bearing microscopic axial growth lines, one just above the suture, the other in the midline of each teleoconch whorl; between the two furrows, there is a strong, wide, smooth spiral cord; another, stronger spiral cord, just below the suture, is formed by a spiral row of about 18 rounded nodules, axially elongated. Base slightly concave, with microscopic axial ribs and with its adapical periphery marked by a peripheral smooth spiral cord; with a very small chink-like umbilicus, sometimes partially covered. Aperture rhomboid, with a columellar fold medium to weakly projected. Outer lip thin and nearly straight.

Remarks: *Triptychus niveus* has a wide geographic range in the western Atlantic, including localities in the U.S.A. and Caribbean (see distribution for references) and the records of this paper from Brazil (Figure 4A–D), where it has been collected on the southeast coast (about $23^{\circ}S$); *Triptychus litosbathron*, on the other hand, is restricted to localities on the southeastern and south coasts of Brazil (about 20° – 25° S).

The inclusion of *Triptychus litosbathron* (Figure 4E–I) in this genus is somewhat doubtful. The shell has the same general shape, a somewhat more immersed protoconch and similar sculpture, with two spiral cords on each teleoconch whorl, the abapical one is nodulose, the adapical smooth (Figure 4E–F, I); in *T. niveus*, there are one smooth adapical spiral cord and two nodulose abapical spiral cords on each teleoconch whorl (Figure 4A, D); however, this pattern is not present on the first three adult whorls, which have only one nodulose spiral and the smooth one (Figure 4A–B). In addition, *T. litosbathron* has an almost smooth base (Figure 4I), lacking the spiral cords present in *T. niveus* (Figure 4D). In spite of all these differences, this seems to be the best generic allocation for the new species herein described, considering also, that it is not desirable to introduce a new generic name in the already confused Pyramidellidae.

Diaz & Puyana (1994: pl. LXIX, fig. 936) illustrated a shell named *Odostomia (Miralda)* sp. The shell is very similar to *Triptychus litosbathron*, but has an additional spiral cord on the base.

Genus *Peristichia* Dall, 1889

Peristichia Dall, 1889: 339. Type species: *Peristichia toreta* Dall, 1889, Florida Keys (USA), by original designation.

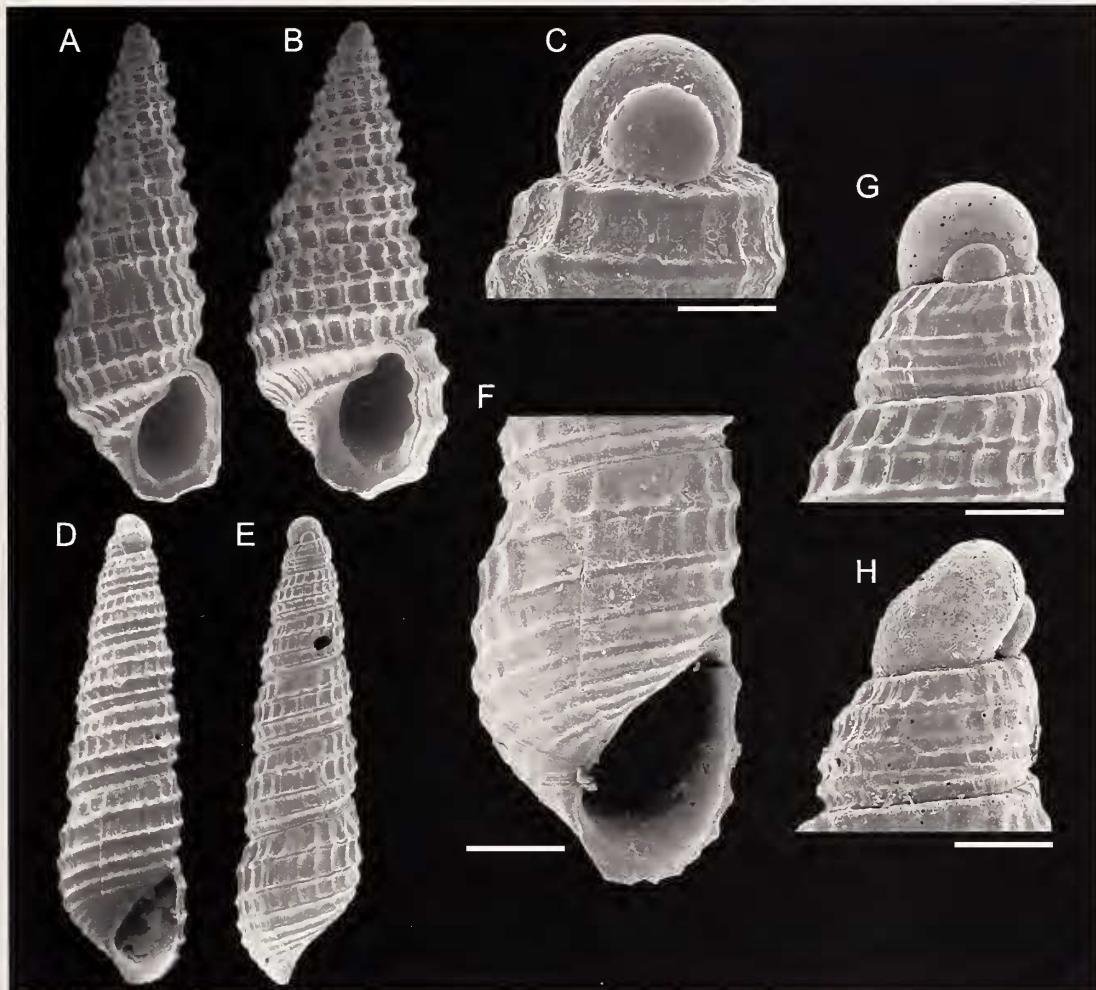


Figure 5. A–C. *Peristichia agria* Dall, 1889. A, MNHN; B, MNRJ 10824; C, IBUFRJ 7774; A–B, whole shells (respective lengths: A, 4.0 mm; B, 4.1 mm); C, protoconch; D–H, *Peristichia lepta* n.sp.: D–G, holotype (MZSP 77062); H, aperture (MZSP 77063). D–E, whole shell (length: 4.2 mm); F, last whorl; G–H, protoconchs. Scale bars: 200 μ m.

Peristichia agria Dall, 1889

(Figure 5A–C)

Peristichia agria Dall, 1889: 340. Rehder (1943: 195, pl. 20, fig. 4); Abbott (1974: 300, fig. 3655); Diaz & Puyana (1994: 236, pl. LXIX, fig. 942); Vokes & Vokes (1983: 32, pl. 30, fig. 18); Rios (1985: 165, pl. 54, fig. 786, 1994: 188, pl. 62, fig. 879); Mello e Perrier (1986: 139, not illustrated); Mello (1990: 41, fig. 11); Barros (1994a: 74, not illustrated).

Type locality: off Cape Hatteras, 63 fms.

Material examined: Bahia state: MNHN, Paulista (praia da Conceição), [2]; MNRJ 10824, Itaparica (praia do Despacho), [3]; MNHN, environs de Recife, [2]; MNHN, Cabo (praia de Gaibu), [2]; MNHN,

Itamaracá (praia de Jaguaribe), [4]; MNHN, Cabo (pedras pretas), [3]; MNHN, Paulista (Maria Farinha), [6]; MNHN, São Luiz (areia preta), [1]; MNHN, Paulista (Maria Farinha), [1]; MNHN, Cabo (praia de Gaibu), [1]; –Rio de Janeiro state: Col.Mol.UERJ 3338, Ilha Grande sta 15 (Ponta Grande Timuiba, 23°3.762'S 44°36.038'W, 7 m), [5]; Col.Mol.UERJ 3337, Ilha Grande sta 16 (Rochedo São Pedro, 23°2.868'S 44°32.722'W, 10 m), [1]; IBUFRJ 13686, Angra dos Reis (praia da Figueira), 1998, [1]; IBUFRJ 7774, GEOMAR XII sta 46 (21°30'S, 40°54.8'W, 27 m), viii.1979, [1]; IBUFRJ 2559, Prainha, Arraial do Cabo, [3].

Distribution: USA: North Carolina to Florida (Dall 1889; Abbott 1974); Mexico: Yucatan Peninsula (Vokes & Vokes 1983); Caribbean: Colombia (Diaz & Puyana 1994); West Indies (Rehder 1943); Brazil:

Ceará to Santa Catarina (Mello 1990; Rios 1994; Barros 1994a).

Peristichia lepta n.sp.

(Figure 5D–H)

Peristichia agria: Farinati (1993: 306, fig. 16).

Type material: Holotype MZSP 77062. Paratypes: MZSP 77063, off São Paulo state, PADCT sta. 6579 (24°42.302'S, 45°18.831'W, 84 m), [16]; MZSP 77064, off São Paulo state, REVIZEE sta 6669 (24°7.42'S, 44°42.22'W, 101 m), [2]; IBUFRJ 9015, Camburi, Espírito Santo state, Eq. Zoo Coll., 15.xii.1987, [2]; IBUFRJ 14085, GEOMAR XII sta 108, 29.viii.1979 NOAS coll., [1]; MNRJ 10693, Ilha Grande sta 36 (Ponta Alta de Parnaioca, 23°12.25'S, 44°30.35'W, 35 m), Rio de Janeiro state, [2]; Col.Mol.UERJ 3335, Ilha Grande sta 36 (Ponta Alta de Parnaioca, 23°12.25'S, 44°30.35'W, 35 m), Rio de Janeiro state, [3]; MNHN, Ilha Grande sta 36 (Ponta Alta de Parnaioca, 23°12.25'S, 44°30.35'W, 35 m), Rio de Janeiro state, [2].

Type locality: off Paraná state, Brazil; REVIZEE sta 6656 (25°22.1'S, 46°47.5'W, 70 m).

Distribution: Only known from southeast-south coasts of Brazil: Espírito Santo, Rio de Janeiro, São Paulo and Paraná states; and an additional record from Baía Blanca, Argentina (Farinati 1993).

Etymology: From the Latin *leptos*: fine, small, thin, delicate. An allusion to the slender shell of this species.

Diagnosis: *Peristichia* species with slender shell of almost straight whorled outline and base with four smooth spiral cords of equal strength.

Description: Shell white, elongate, slender and conical, with about six whorls of almost flat-sided outline; holotype 4.2 mm in length; imperforate. Suture somewhat deep. Protoconch heterostrophic helicoid, with about two whorls forming an angle of about 110° to the shell main axis, diameter about 325 µm. Axial ribs orthocline, or slightly opisthocline, slender, with upper summits forming small nodules projecting slightly over adapical suture; 22 on body whorl of holotype; interspaces as wide as the ribs, bearing microscopic axial growth lines. Spiral sculpture formed by three narrow cords crossing the axial ribs, forming small rising nodules, well visible on the outline of the whorls, giving rise to a cancellate pattern; median spiral cord stronger than the other two; lower cord forming a channeled furrow below it and above suture. Base somewhat elongate, with about four or five smooth, equally strong spiral cords. Aperture somewhat pyri-

form, pointed adapically. Outer lip thin. Columellar fold absent.

Remarks: Reheder (1943) discussed the affinities of *Peristichia*, considering it as a full genus, close to *Triptychus*. *Peristichia lepta* (Figure 5D–H) has some similarities to other species from the western Atlantic included in *Peristichia*, such as *Peristichia agria* (Figure 5A–C) and the type-species *Peristichia toreti* Dall, 1889 (illustration of specimen by Perry & Schwengel 1955: pl. 23, fig. 160), mainly in the general elongate shell shape, sculpture pattern and protoconch; but differs in the absence of a columellar fold and, mainly, by the approximately four spiral cords on the base, whereas the other species of *Peristichia* have only one.

The most similar species to *Peristichia lepta* is *Peristichia agria*, which it resembles in the sculpture pattern, formed by thin, almost orthocline axial ribs crossed by thin spiral cords, giving rise to squared interspaces and small rounded nodules (Figure 5A–B). In *Peristichia lepta*, however, the sculpture is consistently weaker, and the shell is more cylindrical and the whorls less convex in outline (Figure 5D–F); whereas in *P. agria*, the last whorl is somewhat globose, with strongly convex outlines (Figure 5A). Also, in *Peristichia lepta*, there are more numerous and weaker spiral cords on the base (Figure 5F); whereas *P. agria* has a single, stronger spiral cord in the middle of the base (Figure 5A–B).

Peristichia agria has a wide distribution in the western Atlantic, from U.S.A. to southern Brazil (see references in distribution). The known distribution of *Peristichia lepta* is southeast-south coasts of Brazil. Farinati (1993, 1993: 306, fig. 16) illustrated a specimen of *Peristichia lepta*, from the Holocene of Bahía Blanca, Argentina, with the name *P. agria*. This record from Argentina enlarges the geographical and geological distribution of this new species.

Acknowledgments. We are grateful to Dr. Philippe Bouchet and Philippe Maestrati (MNHN) for loan of material from Pernambuco, Brazil; Dra. C. Myaji (Instituto Oceanográfico, Universidade de São Paulo) for providing additional material from Brazil; Dr. Gary Rosenberg and Mr. Paul Callomon (ANSP) for loan of types, Dr. Robert Hershler (USNM) for sending photographs of type material; Mr. Colin Redfern for comments on the identification of the species and loan of specimens from Bahamas Islands. Dr. Serge Gofas, for review of the manuscript. Dra. Janet Reid, for revising the English version. Mr. J. de Brito (UERJ) and Mr. R. Martins (Cento de Pesquisas da Petrobras SA) for their help with SEM photos. This work was partially supported by “Conselho Nacional de Desenvolvimento Científico e Tecnológico” (CNPq).

REFERENCES

AARTSEN, J. J. VAN. 1984. The pyramidellid genera described by The Marquis L. de Folin. *Bollettino Malacologico* 20(5–8):131–138.

AARTSEN, J. J. VAN. 1994. European Pyramidellidae: IV. The genera *Eulimella*, *Anisocycla*, *Syrnola*, *Cingulina*, *Oscilla* and *Careliopsis*. *Bollettino Malacologico* 30:85–110.

AARTSEN, J. J. VAN, E. GITTINGER & J. GOUD. 1998. Pyramidellidae (Mollusca, Gastropoda, Heterobranchia) collected during the Dutch CANCAP and MAURITANIA expeditions in the South-eastern part of North Atlantic Ocean (part 1). *Zoologische Verhandelingen* 321: 3–57.

ABBOTT, R. T. 1974. *American Seashells* 2nd ed. Van Nostrand Reinhold Co.: New York. 663 pp, 24 pls.

ABSALÃO, R. S., F. N. SANTOS & D. DE O. TENÓRIO. 2003. Five new species of *Turbanilla* Risso, 1826 (Gastropoda, Heterobranchia, Pyramidellidae) found off the northeast coast of Brazil (02°–13° S). *Zootaxa* 235:1–11.

ADAMS, A. 1861. On a new genus and some new species of Pyramidellidae from the north of China. *Annals and Magazine of Natural History* 3(7):295–299.

ADAMS, C. B. 1845. Specierum novarum conchyliorum, in Jamaica repertorum, synopsis. *Proceedings of the Boston Society of Natural History* 2:1–17.

ALTENA, C. O. R. 1975. The marine Mollusca of Suriname (Dutch Guiana) Holocene and Recent part III. Gastropoda and Cephalopoda. *Zoologische Verhandelingen* 139: 1–104, 11 pls.

BARROS, J. C. N. 1994a. Estudo dos componentes bióticos da margem continental brasileira. I Micromoluscos dragados durante a comissão “Canopus,” entre 1965 e 1966. *Boletim do Museu de Malacologia* 2:57–84.

BARROS, J. C. N. 1994b. Moluscos recentes dos recifes costeiros e de sedimentos móveis intertidais de Pernambuco e da Bahia, Brasil. *Cadernos Ômega da Universidade Federal Rural de Pernambuco* (série biologia) 4:35–77.

BUSH, K. J. 1899. Descriptions of new species of *Turbanilla* of the Western Atlantic fauna, with notes on those previously known. *Proceedings of The Academy of Natural Sciences of Philadelphia* 51:145–177, pl. 8.

CARPENTER, P. P. 1857. Catalogue of the collection of the Mazatlan shells in the British Museum: collected by Frederick Reigen, described by Philip P. Carpenter. Oberlin press, 552 pp.

CLENCH, W. J. & R. D. R. TURNER. 1950. The Western Atlantic marine mollusks described by C. B. Adams. *Occasional Papers on Mollusks* 1(15):233–403.

DALL, W. H. 1889. Reports on the results of dredging, under the supervision of Alexander Agassiz, in the Gulf of Mexico (1877–78) and in the Caribbean Sea (1879–80), by the U.S. Coast Survey steamer “Blake,” Lieutenant-Commander C.D. Sigsbee, U.S.N., and Commander J.R. Bartlett, U.S.N., commanding. XXIX. Report on the Mollusca. Part 2 Gastropoda and Scaphopoda. *Bulletin of the Museum of Comparative Zoology* 18:1–492, pls. 10–40.

DALL, W. H. & P. BARTSCH. 1904. Synopsis of the genera, subgenera and sections of the family Pyramidellidae. *Proceedings of the Biological Society of Washington* 17:1–16.

DALL, W. H. & P. BARTSCH. 1906. Notes on Japanese, Indopacific, and American Pyramidellidae. *Proceedings of the United States National Museum* 30(1452):321–369, pls. 17–26.

DALL, W. H. & P. BARTSCH. 1909. A monograph of West American Pyramidellidae mollusks. *Bulletin of the United States National Museum* 68:xii + 258, 30 pls.

DIAZ, J. M. M. & M. H. PUYANA. 1994. Moluscos del Caribe Colombiano. *Colciencias y Fundación Natura: Santafé de Bogotá*. 291 pp, 37 pls.

FABER, M. J. 1988. Studies on West Indian marine molluscs 13. The malacological taxa of Gordon W. Nowell-Usticke. *Der Kreukel* 24:67–102.

FARINATI, E. A. 1993. Pyramidellidae (Mollusca, Gastropoda) en sedimentos Holocenos de Bahía Blanca, Argentina. *Ameghiniana* 30(3):297–310.

FOLIN, L. DE. 1873. En rade de la Pointe-à-Pitre (Guadeloupe). In: L. de Folin & L. Périer (eds.), *Les Fonds de la Mer* 2:169–171, pl. 6.

JOHNSON, R. I. 1989. Molluscan taxa of Addison Emery Verrill and Katharine Jeannette Bush, including those introduced by Sanderson Smith and Alpheus Hyatt Verrill. *Occasional Papers on Mollusks* 5(67):1–143.

JONG, K. M. DE & H. E. COOMANS. 1988. Marine Gastropods from Curacao, Aruba and Bonaire. E. J. Brill: Leiden. 261 pp, 47 pls.

LINDEN, J. VAN DER & J. C. A. EIKENBOOM. 1992. On the taxonomy of the Recent species of the genus *Chrysallida* Carpenter from Europe, the Canary Islands and the Azores (Gastropoda, Pyramidellidae). *Basteria* 56(1–3):3–63.

MELLO, R. L. S. 1990. Gastropoda: Opistobranchia: Pyramidellidae Gray, 1840 da América do Sul, litoral nordeste do Brasil. *Caatinga* 7:38–43.

MELLO, R. L. S. & L. L. PERRIER. 1986. Polyplacophora e Gastropoda do litoral sul de Pernambuco, Brasil. *Cadernos Ómega da Universidade Federal Rural de Pernambuco* 2:107–144.

MÖRCH, O. A. L. 1875. Synopsis Molluscorum marinorum Indiarum occidentalium. *Malacozoologische Blätter für 1874 und 1875* Cassel 22:142–184.

NOWELL-USTICKE, G. W. 1959. A Check list of Marine Shells of St. Croix, vi + 90 pp, 4 pls.

ODÉ, H. & A. B. SPEERS. 1972. Notes concerning Texas beach shells. *Texas Conchologist* 9(1):1–17.

ODÉ, H. 1993. Distribution and records of the marine Mollusca in the northwest Gulf of Mexico (a continuing monograph). *Texas Conchologist* 29(3–4):53–65.

OLIVEIRA, G. S. P. 1992. Moluscos em sedimentos biogênicos da Ponta de Itapuã, Salvador, Bahia. *Comunicaciones de la Sociedad Malacológica del Uruguay* 7(62–63):277–289.

OLSSON, A. A. & T. L. MCGINTY. 1958. Recent marine mollusks from the Caribbean coast of Panama with description of some new genera and species. *Bulletins of American Paleontology* 39(177):1–58.

PEÑAS, A. & E. ROLÁN. 1998. La familia Pyramidellidae Gray, 1840 (Mollusca, Gastropoda) en África Occidental. 3. El género *Chrysallida* s. l. *Iberus Suplemento* 4:1–73.

PEÑAS, A. & E. ROLÁN. 1999. La familia Pyramidellidae Gray, 1840 (Mollusca, Gastropoda, Heterostropha) en África Occidental. 6. El género *Pseudoscilla*. *Iberus* 17(2): 11–26.

PEÑAS, A., J. TEMPLADO & J. L. MARTÍNEZ. 1996. Contribución al conocimiento de los Pyramidelloidea (Gastropoda: Heterostropha) del Mediterráneo español. *Iberus* 14(1):1–82.

PERRY, L. M. & J. S. SCHWENGEL. 1955. Marine shells of the western coast of Florida. *Paleontological Research Institution Ithaca*. New York. 318 pp.

PILSBRY, H. A. & C. G. AGUAYO. 1933. Marine and freshwater mollusks new to the fauna of Cuba. *The Nautilus* 46(4):116–123.

PIMENTA, A. D., R. S. ABSALÃO & A. S. ALENCAR. 2000. *Odostomella carceralis* spec. nov. from Ilha Grande, SE Brazil (Gastropoda: Heterobranchia, Pyramidellidae). *Basteria* 64:65–70.

PIMENTA, A. D. & R. S. ABSALÃO. 2001a. Taxonomic revision of the species of *Turbanilla* Risso, 1826 (Gastropoda, Heterobranchia, Pyramidellidae) with type localities in Brazil, and description of a new species. *Basteria* 65:69–88.

PIMENTA, A. D. & R. S. ABSALÃO. 2001b. The genera *Bacteridium* Thiele, 1929 and *Careliopsis* Mörch, 1875 (Gastropoda: Pyramidellidae) from the east coast of South America. *Bollettino Malacologico* 37(1–4):41–48.

PIMENTA, A. D. & R. S. ABSALÃO. 2002. On the taxonomy of *Turbanilla puncta* (C. B. Adams, 1850) (Gastropoda, Pyramidellidae), with the description of a new species from Brazil and remarks on other western Atlantic species. *Zootaxa* 78:1–16.

PIMENTA, A. D. & R. S. ABSALÃO. 2004a. Fifteen new species and ten new records of *Turbanilla* Risso, 1826 (Gastropoda, Heterobranchia, Pyramidellidae) from Brazil. *Bollettino Malacologico* 39(5–8):113–140.

PIMENTA, A. D. & R. S. ABSALÃO. 2004b. Review of the genera *Eulimastoma* Bartsch, 1916 and *Egila* Dall & Bartsch, 1904 (Mollusca, Gastropoda, Pyramidellidae) from Brazil. *Zoosystema* 26(2):157–173.

REDFERN, C. 2001. Bahamian Seashells. Bahamianseashells.com, Inc.: Boca Raton. 280 pp, 124 pls.

REHDER, H. A. 1943. New marine mollusks from the Antillean Region. *Proceedings of the United States National Museum* 93(3161):187–203, pls. 19–20.

RIOS, E. C. 1970. Coastal Brazilian Seashells. Museu Oceanográfico de Rio Grande: Rio Grande. 255 pp, 60 pls., 4 map.

RIOS, E. C. 1975. Brazilian Marine Mollusks Iconography. Museu Oceanográfico da FURG: Rio Grande. 331 pp, 91pls.

RIOS, E. C. 1985. Seashells of Brazil. Museu Oceanográfico da FURG: Rio Grande. 328 pp., 102 pls.

RIOS, E. C. 1994. Seashells of Brazil. 2nd ed. Museu Oceanográfico Prof. E.C. Rios da Fundação Universidade de Rio Grande: Rio Grande. 368 pp., 113 pls.

ROBERTSON, R. 1978. Spermatophores of six eastern north American Pyramidellid Gastropods and their systematic significance (with the new genus *Boonea*). *Biological Bulletin* 155:360–382.

SÁ, M. R., J. H. N. LEAL & A. C. S. COELHO. 1984. Gastrópodes encontrados no conteúdo digestivo de exemplares de *Holothuria grisea* Selenka, 1867 (Echinodermata, Holothuroidea) capturados no litoral sul do Estado do Rio de Janeiro, Brasil. *Boletim do Museu Nacional* 306:3–12.

SCHANDER, C. 1994. Twenty-eight new species of Pyramidellidae (Gastropoda, Heterobranchia) from west Africa. *Notiziario CISMA* 15:11–78.

SCHANDER, C., J. J. VAN AARTSEN & J. CORGAN. 1999. Families and genera of the Pyramidelloidea (Mollusca: Gastropoda). *Bollettino Malacologico* 34(9–12):145–166.

TRYON, G. W. 1886. *Manual of Conchology; Structural and Systematic, with illustrations of the species*. Published by the author: Philadelphia. 8:461 pp., 79 pls.

TURGEON, D. D., J. F. QUINN, A. E. BOGAN, E. V. COAN, F. G. HOCHBERG, W. G. LYONS, P. M. MIKKELSEN, R. J. NEVES, C. F. E. ROPER, G. ROSENBERG, B. ROTH, A. SCHELTEMA, F. G. THOMPSON, M. VECCHIONE & J. D. WILLIAMS. 1998. Common and scientific names of aquatic invertebrates from the United States and Canada: mollusks, 2nd edition. American Fisheries, Special Publication 26:526.

VERRILL, A. E. 1884. Second catalogue of Mollusca recently added to the fauna of New England Coast and the adjacent parts of the Atlantic, consisting mostly of deep-sea species with note on other previously recorded. *Transactions of the Connecticut Academy of Sciences* 6(1):139–294, pls. 28–32.

VERRILL, A. E. & K. J. BUSH. 1900. Additions to the marine mollusca of the Bermuda. *Transactions of the Connecticut Academy of Sciences* 10:513–544, pls. 63–65.

VOKES, H. E. & E. H. VOKES. 1983. Distribution of Shallow-Water Marine Mollusca, Yucatan Peninsula, Mexico. *Middle American Research Institute* 54:183, 50 pls.

WARMKE, G. & R. T. ABBOTT. 1968. Caribbean Seashells. Livingstone Publ. Co.: Narbeth. xx + 348 pp., 44 pls.

WISE, J. B. 1996. Morphology and phylogenetic relationships of certain pyramidellid taxa (Heterobranchia). *Malacologia* 37(2):443–551.

WISE, J. B. 2001. Anatomy of *Boonea jadisi* (Olsson and McGinty, 1958) (Heterobranchia: Pyramidellidae) from the western Atlantic, with comparisons to other species in the genus. *The Nautilus* 115(2):68–75.